APRIL 2007

CALIFORNIA DEBT AND INVESTMENT ADVISORY COMMISSION
LIVING WITH AN ISSUE: ON-GOING DEBT ADMINISTRATION

VARIABLE RATE FINANCING

JPMorgan

Size of the short-term market

- Overall size for short-term tax-exempt market

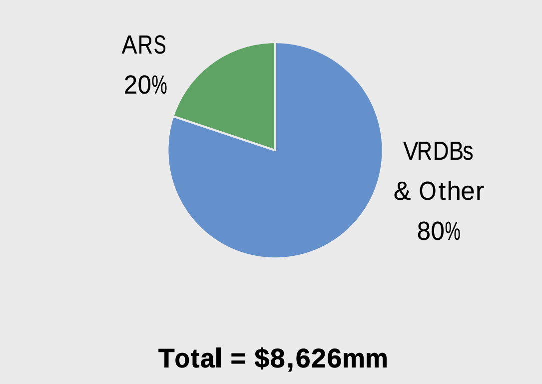
- Daily VRDBs: $53 billion

- Weekly VRDBs: $307 billion

- Total tax-exempt ARS market: $142 billion (approximately 2/3 7-day and 1/3 35-day)

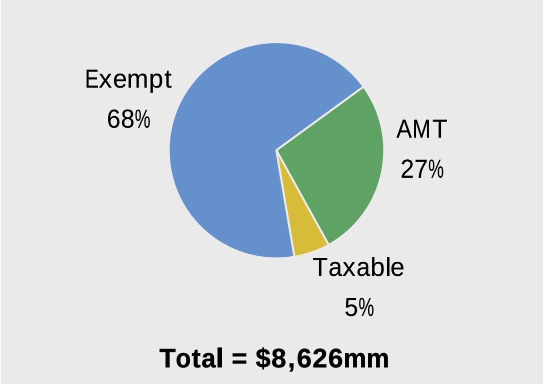
California March 2007 Snap Shot

CA deals by type (3/06-3/07)



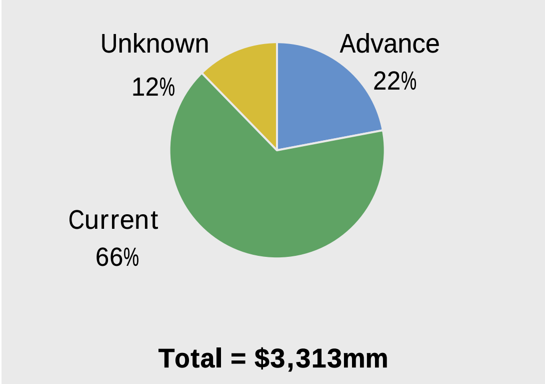
Source: Thompson Financial

CA deals by tax status (3/06-3/07)



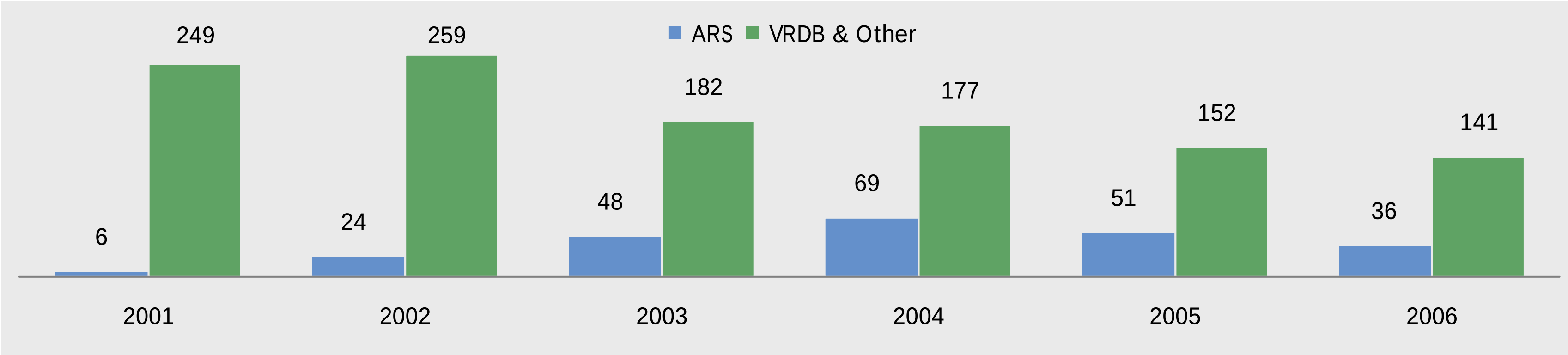
Source: Thompson Financial

CA deals by refunding types (3/06-3/07)



Source: Thompson Financial

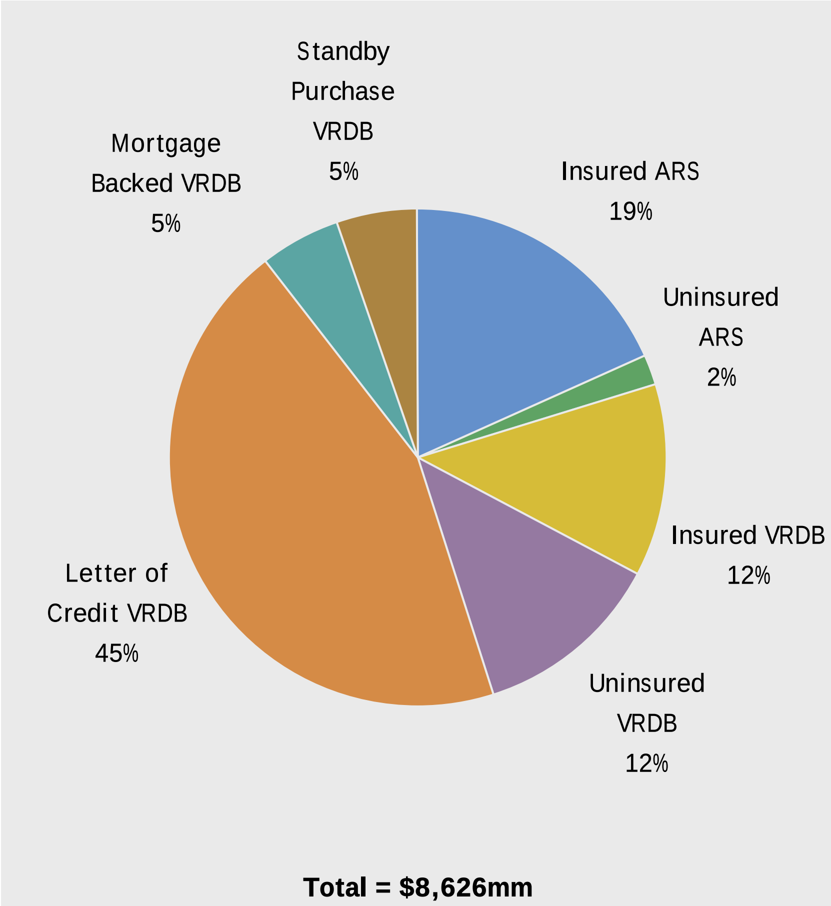
CA deals by type



Source: Thompson Financial

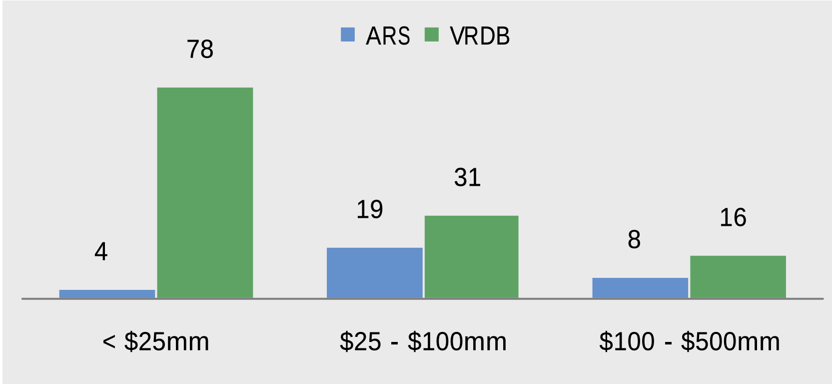
California March 2007 Snap Shot

CA deals by credit enhancement (3/06-3/07)



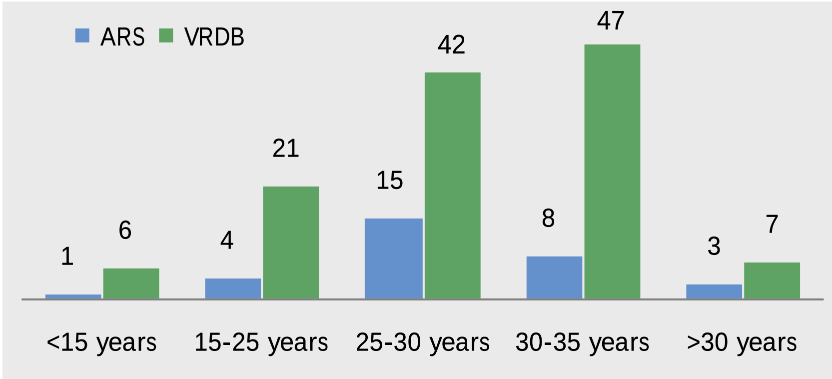
Source: Thompson Financial

CA deals by par amount (3/06-3/07)



Source: Thompson Financial

CA deals by final maturity (3/06-3/07)



Source: Thompson Financial

Why issuers consider variable rate debt as a funding vehicle

- Variable rate debt has historically provided the lowest cost of capital
- Variable rate debt offers alternative interest rate and timing considerations for issuers
  - Long term commitment
  - Generally ability to change modes
  - Prepayment flexibility
    - Interim financing vehicle
- Variable rate debt offers issuers diversification relative to fixed rate debt
  - Interest cost
  - Investor base
  - Credit providers
  - Credit structures

Tax-Exempt Short-Term Market Characteristics

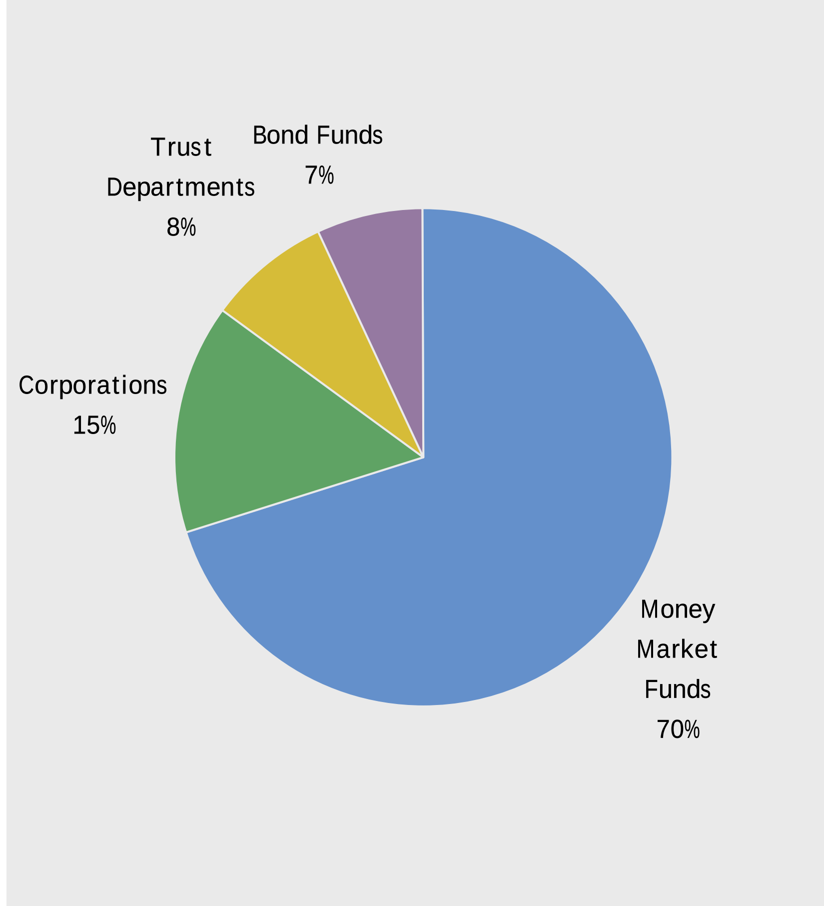
- Types of short-term debt instruments
  - Variable Rate Demand Bonds (“VRDBs”)
  - Auction Rate Securities (“ARS”)
  - Commercial Paper (“CP”)
  - Index Floaters (“% Floaters,” “FRNs,” Libor or SIFMA)
  - CPI Bonds
  - BANs, TANs, RANs
- AMT and Non-AMT Market

- Credit structures include:
  - VRDBs
    - Letter of Credit
    - Bond Insurance/Standby Purchase Agreement (SPA)
    - Dedicated liquidity facility
    - Issuer provided liquidity (self-liquidity)
  - ARS
    - Insurance
    - Unenhanced for some highly rated issuers
  - Commercial Paper
    - Letter of Credit
    - Dedicated liquidity facility
    - Self-liquidity
    - Hybrid liquidity

Short Term Investors

- The traditional tax-exempt short-term market is heavily dependent on two classes of buyers: money market funds and corporations; it is not as deep or broad as is the taxable short-term market
- Consequently, it is subject to technical considerations to a greater extent than the taxable short-term market
- The tax-exempt short-term market is more volatile, and is subject to seasonal and cyclical pressures, e.g., tax payment dates and quarter/ year end periods
- The market is also subject to disintermediation when alternative investments (e.g., equities, taxable short-term instruments) are relatively more attractive – this is the non-traditional buyer market

Breakdown of VRDB Buyers



Variable Rate Debt – Things to Consider

Issue Specific

- Size
- Credit enhancement
- Callability
- Mode

Process Specific

- Documentation
- Ratings process
- Bond counsel
- Opinions and disclosure

Issuer Specific

- New issuer
- Specialty state
- Debt profile
- Risk profile
- Tax-exempt vs. taxable
- Underlying ratings
- Integrating new products into standing program
- Buyer diversification
- Innovative products/programs
- Portfolio diversification

Analysis Specific

- Program administration
- Suitability
- Flexibility
- Saturation
- Comparables
- Refunding and sinking fund analysis – old and new
- Roll and reset dates
- Converting modes
- Re-offerings

Variable Rate Demand Bonds: Overview

- Variable Rate Demand Bonds ("VRDBs") are debt instruments with a long-term nominal maturity which bear interest at variable rates adjusted at predetermined intervals
- Short-term tender features give VRDBs the liquidity and principal preservation characteristics of money market paper, allowing for pricing at the short end of the yield curve
- Issuers and their Remarketing Agent can shift between pricing modes (daily, weekly, monthly, flexible) throughout the term of a VRDB financing
- The holder of a VRDB always has the option to tender securities
- As built-in credit protection for the investor, mandatory tenders are generally required for conversion to a new interest rate mode, substitution of a credit provider or expiration of the credit/liquidity facility

Variable Rate Demand Bonds: Ratings Considerations

- VRDBs receive two ratings from the major rating services
  - Long-term rating is the evaluation of payment of regularly scheduled principal and interest
  - Short-term rating is the evaluation of payment of purchase price upon optional or mandatory tender
- Long-term rating of VRDB should be at least "Aa/AA" category based on underlying credit of borrower or third party guarantor
- Short-term ratings of VRDB should be in the highest rating category of VMIG-1 from Moody's and A-1(+) from S&P

VRDB Short-Term Rating Categories

Moody's	S&P	Fitch
VMIG-1	A-1(+)	F-1(+)
VMIG-2	A-2	F-2
VMIG-3	A-3	F-3

Auction Rate Securities: Overview

- Auction Rate Securities (“ARS”) are debt instruments with a long-term nominal maturity in which the interest rate is periodically reset through a Dutch Auction process
- An ARS auction is typically held every 7, 28 or 35 days for tax-exempt securities, with interest paid at the end of each auction period
- In a Dutch Auction, a Broker-Dealer submits bids, on behalf of current and prospective investors, to the Auction Agent; based on these bids, the Auction Agent will set the next interest rate by determining the lowest rate to “clear” the total outstanding amount of ARS
- ARS holders do not have the right to “put” their securities back to the issuer; as a result no liquidity facility is required, thereby eliminating the annual bank support fee typically associated with other variable rate programs
- The Dutch Auction rate setting method will reflect changes in the general interest rate environment and credit characteristics of the financing
- The auction product is generally utilized by high quality issuers or those offering insured securities

Auction Rate Securities: Market Characteristics

- Due to the lack of a dedicated liquidity facility and associated bondholder tender option, the ARS market is very credit sensitive
  - Stable "A" - category rated underlying credits is minimum requirement
- Most ARS deals are in 7 day resets. Is there saturation?
- ARS are not eligible to be purchased by tax-exempt money market funds due to the lack of a tender option
  - Primary ARS purchasers are corporate cash managers and high net-worth retail investors
- The minimum size of an auction is generally $10 million

ARS Bidding Process

- In the Dutch Auction, the clearing price is determined by the market. The winning rate becomes the rate of all bonds until the next auction
- The highest winning yield becomes the common yield

Example: $100 Million ARS

Bid Amount ($ Millions)	Cumulative ($ Millions)	Bid Rate (%)	Auction Results
15	15	1.60	
30	45	1.85	Filled at Clearing
20	65	1.90	Rate of 2.10
20	85	2.00	
15	**100**	**2.10**	**Clearing Bid**
15	115	2.15	Rejected
25	140	2.20	Orders
15	155	2.45	

Co-Broker Dealer Auction Rate Securities bidding process

- By adding a broker dealer, the College can lower its cost of capital by increasing the investor pool for its securities

$100mm Auction Rate Securities

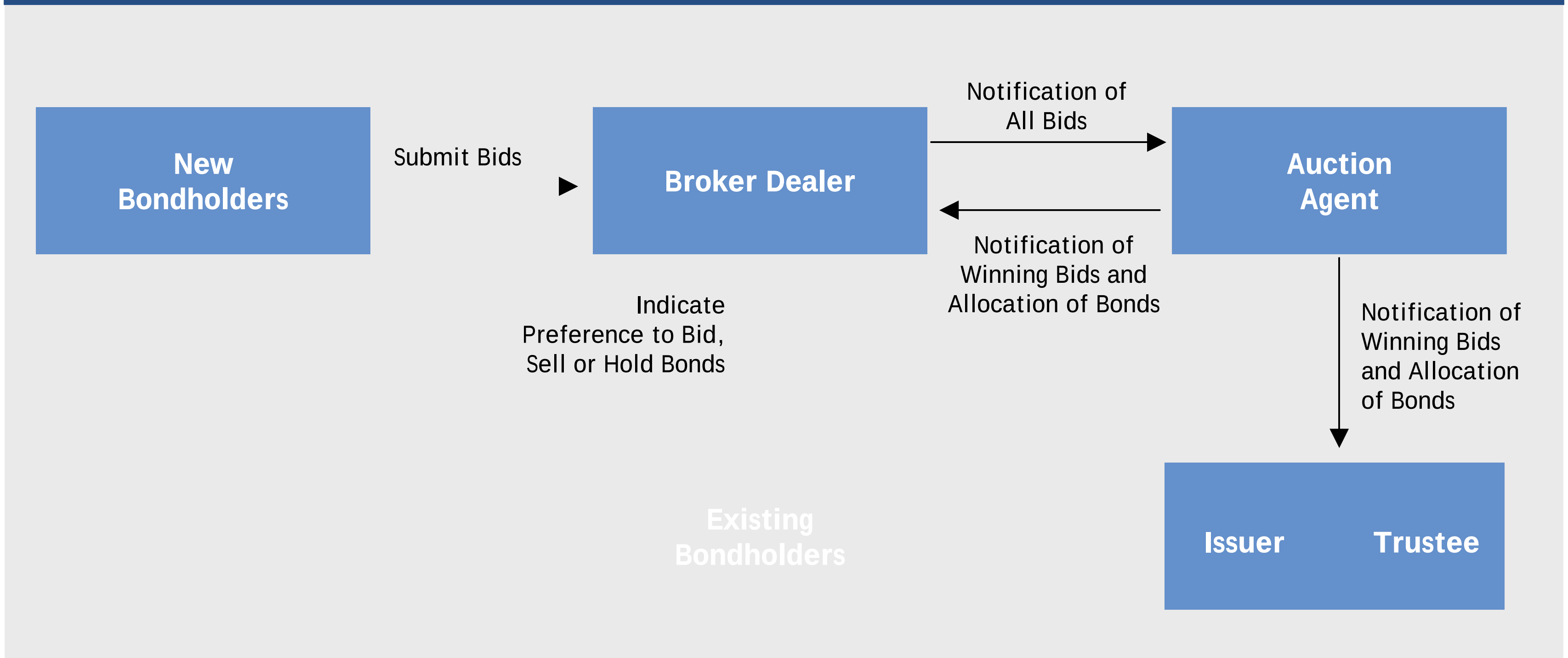
Investor	Broker Dealer	Bid amount ($mm*)	Cumulative ($mm*)	Bid rate (%)	Auction results
A	New BD	10	10	2.58	
1	Existing	15	25	2.60	Filled at clearing
B	New BD	25	50	2.65	rate of 2.77
2	Existing	30	80	2.75	
C	**New BD**	**20**	**100**	**2.77**	**Clearing bid**
3	Existing	20	120	2.78	
4	Existing	20	140	2.82	
5	Existing	15	155	2.85	Rejected
D	New BD	15	170	2.87	Orders
6	Existing	15	185	2.90	
E	New BD	10	195	2.91	
7	Existing	15	210	2.95	

* mm = Millions

- Investor bids have increased from $135mm to $210mm
- Again, the highest winning yield becomes the common yield, but now the highest winning yield has fallen from 2.85% to 2.77%

Illustration of Auction Rate Securities Process

Day of Auction



Next Day

- Broker Dealer records and settles trades for next day settlement

Commercial Paper: Overview

	Commercial Paper
Use	■ Typically utilized to finance long term construction projects or ongoing capital projects ■ CP is issued as funds are needed (up to a maximum authorized amount) ■ Commonly utilized by issuers with active construction programs
Advantages	■ Offers low cost of capital while providing the flexibility to draw down or repay principal as needed ■ Ability to choose specific maturities, up to a maximum of 270 days, which may lower the cost of funds during particular short-term rate spikes ■ Ability to treat the CP program as a "line of credit" or permanent portion of the capital structure that can be drawn down or paid off at any time ■ Allows borrowing to match fluctuating capital needs
Considerations	■ Requires credit support and active program management ■ Credit renewal risk ■ Highly rated issuers may provide self-liquidity

CP Marketing Calendar

Calendar		
Month	**Strategy**	**Reason**
January	All Days Open	Largest dividend reinvestment of the year. Balance sheet window dressing ceases
February	All Days Open. Avoid Day Before Presidents Day	Buyers use Fridays before holidays to get higher rates
March	Avoid 15th - 31st	Corporate tax days, end of the quarter for balance sheet dressing
April	Avoid 15th - 30th	Tax payments force mutual funds to liquidate – only buy when rates are forced upward
May	All Days Open Except Day Before Memorial Day	Long weekends cost issuers in rate so dealers can avoid cost of carry
June	Avoid 15th - 18th Avoid 26th - 30th	Corporate Tax End of Quarter
July	Avoid 15th - 31st	Large supply of short-term paper in the market
August	Avoid 15th - 31st	Large supply of short-term paper in the market, tuition payments
September	Avoid Labor Day Week Avoid 18th - 22nd	Holiday cost of carry, Corporate Tax date, heavy liquidation, quarter end
October	All Days Open	
November	Avoid Wednesday and Friday of Thanksgiving Week	Vacations and cost of carry considerations cause rates to spike
December	Avoid 15th - 31st	Year-end balance sheet dressing, tax date and vacations result in rate spike

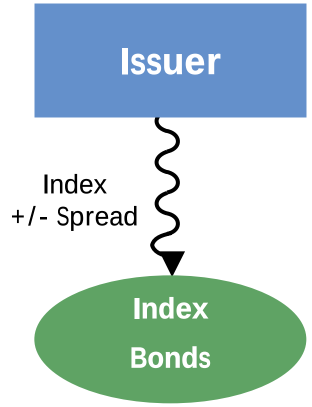
Comparison of Variable Rate Funding Alternatives

Alternative Variable Rate Structures - Associated Risks and Considerations			
	VRDBs	**Auction Rate Securities**	**Commercial Paper**
Interest Rate Risk	Yes	Yes	Yes
Tax Risk	Yes	Yes	Yes
Liquidity Facility Required	Yes	No	Yes
Credit Enhancement Required	Yes	Yes	Yes
Liquidity Renewal Risk	Yes	No	Yes
Failed Auction/ Remarketing Risk	Yes	Yes	Yes

What are Index Bonds?

Typical Bond Structure

- Maturities range 10-30 years, and can be bullets or amortizing structures
- Variable interest rate based on an index plus or minus a fixed spread
  - Can be structured using reference rates such as 3-month LIBOR, CPI or a constant maturity swap rate (i.e., 5 or 10 year CMS rate)
- Optional redemption provisions (call options) may be structured in 5 to 10 years
- Investors do <u>not</u> have a put to the issuer; strictly passive reset
- An issuer sells bonds through a public offering to investors
  - Can be incorporated into multi-modal documents similar to VRDBs



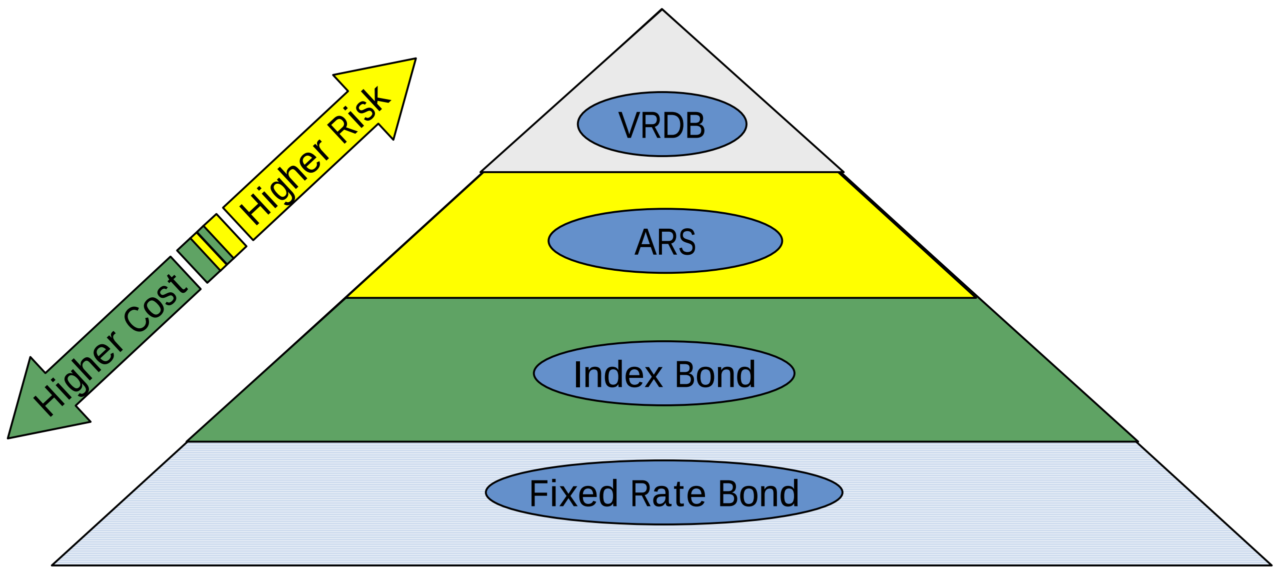
VARIABLE RATE FINANCING

Index Bonds: Market Background

- In recent months, there has been an emergence of tax-exempt Index Bonds in the market
- Investor interest has been strong, with issues oversubscribed
  - Demand has been driven mainly by the attractive yield on the bonds when compared to other investment opportunities
- Tax-exempt issuers may be able to achieve savings by incorporating Index Bonds into an upcoming issue
  - To achieve synthetic fixed rate exposure, issuers would swap the bond index to a bond equivalent fixed rate
  - To achieve synthetic tax exempt floating rate exposure, issuers would swap the index to a BMA Index-based floating rate through a basis swap
- Index Bonds represent committed funding; no investor put

Index Bonds: Part of a strong and diversified capital structure

Capital Structure Components – "The Rational Pyramid"



Unhedged Bond Risk Profile

Risk Profile			
	VRDB	**ARS**	**Index Bonds**
Considerations			
Tax Risk	Yes	Yes	No
Put Risk	Yes	No	No
Issuer Call	Yes	Yes	Yes (5 or 10 years)
Funding	Uncommitted	Committed	Committed
Interest Rate Risk	Yes	Yes	Structure dependent

Framework for Analyzing Financing Alternatives

Ongoing Interest Costs

Structure	Synthetic Fixed Rate Bonds						Natural Fixed Rate Bonds	
Underlying Bonds	Weekly Variable Rate Demand Bonds				Auction Rate Securities		Fixed Rate Bonds	
Credit Enhancement	Liquidity w/ Insurance		Liquidity w/o Insurance		Insured 7-day		Insured	Uninsured
Rating	AAA		AA		AAA		AAA	AA
Swap Index	BMA	68% of LIBOR	BMA	68% of LIBOR	BMA	68% of LIBOR	-	-
Swap Rate / Bond Yield								
Expected Variable Rate Trading Spread to BMA								
Remarketing Costs[1]								
Ongoing Liquidity Costs								
Day count / payment frequency adjustment[2]								
Upfront Credit Enhancement (amortized)[3]								
Upfront Issuance Costs (amortized)[4]								
Total All-in Cost								

Note: Indicative pricing as of [ ]. Swaps subject to approval.

1 Remarketing costs include Auction Agent fees of 0.01% for ARS.

2 Reflects day count/time value adjustment to match bond convention of semiannual 30/360.

3 Assumes a 0.40% upfront insurance premium amortized over 40 years.

4 Assumes average takedown of x/bond for VRDBs, x/bond for Auction Rate Securities and x/bond for fixed rate bonds; Management Fee of x/bond; Cost of Issuance of x and State Bond Issuance Charge of x.

Framework for Analyzing Risk

Risk Management

	Floating Rate Bonds		Synthetic Fixed Rate Bonds	Natural Fixed Rate Bonds
	VRDBs	ARS		
Put Risk	**Yes**	**No**	**Same as floating[1]**	**No**
Failed Auction Risk	**No**	**Yes**	**Same as floating[1]**	**No**
Credit Protection Typical	**Yes**	**Yes**	**Same as floating[1]**	**Yes/No**
Liquidity	**Yes**	**No**	**Same as floating[1]**	**No**
Bond Insurance	**Yes/No**	**Yes**	**Same as floating[1]**	**Yes/No**
Interest Rate Risk	**Yes**	**Yes**	**No**	**No**
Basis Risk	**No**	**No**	**Yes[2]**	**No**
Counterparty Risk	**No**	**No**	**Yes**	**No**
Call Option	**Yes**	**Yes**	**No**	**Yes**

1 Risks and requirements result from floating rate bonds and are not changed by overlying swap.
2 Additional basis risk with % of LIBOR swap.

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